

depressions, and especially in the deepest hollows on the bottom of the sea, where the water is over 4,000 fathoms deep; but such is not the case as far as we know. The deepest depressions lie in the North Pacific, the deepest of all being one close to the Kurile Islands, the soundings there being 4,655 fathoms.

Mr. Alexander Agassiz has glanced over and helped to sort the whole deep-sea collection made by the *Challenger*, and he believes that the collection made by the successive dredgings of the United States Government in deep water off the eastern coast of the United States and the West Indies contains almost all the types dredged by us all over the world. No better proof of the ubiquity of deep-sea species could be given. We got quite tired on the *Challenger* of dredging up the same monotonous animals wherever we went.

Many animals which occur in deep water in temperate and tropical regions occur in shallow water in high latitudes. Hence it is usually concluded that an Arctic or Antarctic fauna has colonised the deep sea; but probably it is also

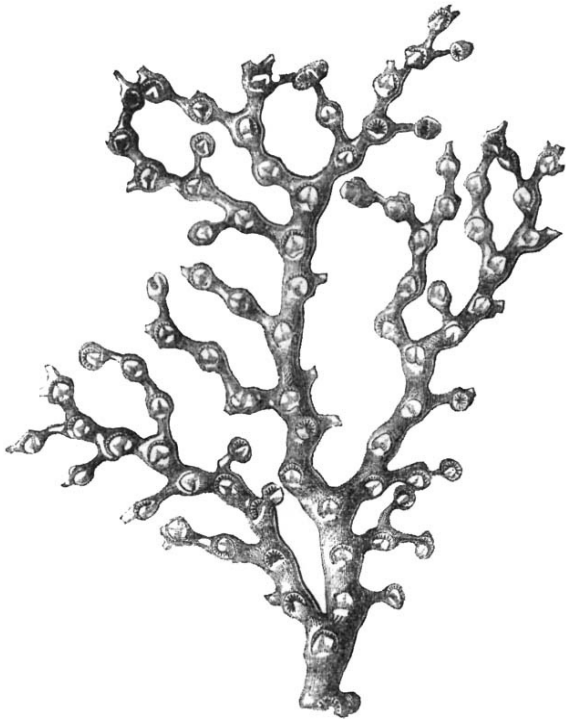


FIG. 9.—*Cryptohelia pudica* (M. Edw. & H.). Twice the natural size.

the case that deep-sea forms have moved up into shallow water in polar regions, because there the temperature is low and the water is dark during most of the year, both from the absence of sun or the obliquity of its rays, and because of the covering of the water by ice and snow. Probably colonisation has taken place in both directions. Some of the identical animal forms occurring at New Zealand and Great Britain may have moved up from deep water at both places.

The higher we rise into shallow water above the limit of the deep-sea fauna, the more restricted becomes the geographical range of the species occurring. I may cite an instance. Off the Aru Islands in the Malay Archipelago we dredged in 129 fathoms at the same haul a number of corals and other animals, nearly all of which we did not find elsewhere, and which I believe Mr. Agassiz has not found off the American coast.

(To be continued.)

## NOTES

WE are sure our readers of all shades of politics must regret that Sir John Lubbock has lost his seat in Parliament. We have nothing to do with the immediate causes of his defeat, but for the sake of science and enlightened legislation we trust he may find some other constituency liberal enough in the best sense of the term, to choose him as its representative. Meantime his loss is to some extent made up for by the election of Prof. Maskelyne, though we trust the latter's duties as a legislator will not lead to the neglect of what we consider his much higher function of original research.

WE have some further details concerning the new agricultural college about to be opened near Salisbury. Mr. John Wrightson, for many years Professor at Cirencester, and well known for his contributions to scientific agriculture, is converting his house and extensive farm near Downton into an institution which shall combine lands worked by himself with a teaching staff mainly composed of experienced professors once at the Royal Agricultural College. There is plenty of room, not for one new college only, but for half a dozen; and the present scheme commends itself to us in many ways. We feel sure that it will work in friendly rivalry with Cirencester, avoiding its mistakes while profiting by its experience. We would suggest that some shorter title than the "South Wiltshire and Hampshire Agricultural College" should be found for the new institution.

WE understand that Prof. Boyd Dawkins, F.R.S., of Owens College, Manchester, has accepted an invitation to give a course of lectures at the Lowell Institute, Boston, Mass., in October and November of this year.

THE eighteenth meeting of the delegates of the French Sociétés Savantes took place at the Sorbonne on March 31. M. Regnier, President of the Archeological Section, was the president at the inaugural sitting. He was assisted by M. Milne Edwards, President of the Science Section, and M. Delisle, President of the Historical Section. In his speech the President spoke in some detail of the heliographical reproduction of old manuscripts published recently in England. The Section of Science was divided as usual into three commissions. M. Allegret, Professor of the Faculty of Lyons, was appointed President of the Commission for Mathematics; M. Filhol, Professor to the Faculté des Sciences of Toulouse, President of the Commission for Physico-Chemical Science; and M. Cotteau President of the Commission of Natural Sciences. The General Sitting of Sciences were presided over by M. Milne-Edwards, assisted by M. Faye and M. Wurtz. The distribution of prizes took place on Saturday, April 3, under the presidency of M. Ferry, the Minister of Public Instruction. Prince Oscar of Sweden, Prof. Nordenskjöld, and Capt. Palander were present, and greatly cheered by undergraduates and spectators. Except the allusion to the high rewards, the speech of M. Ferry was almost entirely confined to educational topics. According to the proposals of the Commission of Sciences gold medals have been awarded to Dr. Crevaux for his explorations in Tropical America, M. Crova, Professor to the Faculté des Sciences de Montpellier, and M. Violle, Professor to the Faculté of Lyons, for their works in Physics; M. Pierre, as Director of the Botanical Garden of Saigon (Cochin-China), and MM. Chantre and Falsan for their studies of the old glaciers of the Rhone.

THE Italian Minister of Agriculture and Commerce has decided to present to Parliament a project for executing a great geological map of the kingdom. The expense is calculated at 6,000,000 francs.

SHOCKS of earthquake were felt at Tenez, on the Algerian coast, on March 2, at 8.30 p.m., and at Orleansville and Tenez on the 25th, at 5.20 a.m.

THE *Gardeners' Chronicle* regrets to hear of the decease from cholera of Adolf Biermann, the Curator of the Royal Botanic Garden, Calcutta.

ON the 1st inst. the Geological Society of France celebrated the fiftieth anniversary of its foundation.

THE annual meeting of the Paris Physical Society took place on April 2 in the large hall of the Société d'Encouragement. It was very well attended, the hall having been lit by ten Werdermann lights, which worked with great regularity and gave a very pure illumination. Very few new experiments were made. We must notice, however, a new use of M. Trouve's polyscope. M. Trouve placed his electrical polyscope in the stomach of a fish swimming in an aquarium, and without its seeming to suffer any inconvenience, it radiated a light equal to one common candle.

IN various works on botany M. Alph. de Candolle has remarked (*Arch. des Sciences*, March), there are enigmatical and even unintelligible descriptions, which it would have been better not to publish. And this is the case not only with incompetent writers, but with those of the first rank. He gives a list of *species dubie*, &c., from vols. xiv. to xvii. of the *Prodromus* (published 1856-1873), referred to their authors (deceased), care having been taken to attribute each enigma to its true origin. Those volumes of the *Prodromus* contain 11,056 species classed and described, and the enigmatical amount to 562, or about 5 per cent. It is noted that there are pretty large proportions of enigmas (1) in certain authors who have written much, as Blume (66), Miquel (59), Roxburgh (20), Kunth (19), Sprengel (17); (2) in authors who have published only one or two volumes, or even simple memoirs, such as Blanco (32), Opiz (28), Loureiro (15), Don (14), Noronha (11), Griffith (11), Hamilton (11) . . . Martens and Galeotti (4). (The extent of the writings must be taken into account.) Three great naturalists who have written much, viz., Linnæus, Lamarck, and Brown, stand together about the middle of the list, with the numbers 7, 9, and 8 severally. M. de Candolle refers further to a document by Endlicher, in which that naturalist gives a list of enigmatical genera, amounting to 109 out of the 6,895 genera known in 1840, or about 1½ per cent. Analysis here shows that the incapable or mediocre authors have given most enigmas. Père Vellozo (29) is most prominent in this respect, and a regret is expressed that he, with some other culpable *pères* (Blanco, Loureiro, &c.), did not confine themselves to writing homilies. The troublesome result of certain publications has now rendered botanists more prudent.

THE Belgian Academy of Sciences has announced the following subjects of prize competition for 1881:—In mathematical and physical sciences: 1. Extend, as much as possible, the theories of points and straight lines of Steiner, Kirkman, Cayley, Salmon, Hesse, Bauer, to properties which are, for superior plain curves, for surfaces and for twisted curves, the analogues of the theorems of Pascal and Brianchon. 2. Extend to eight points of a curve of the third order the anharmonic property of four points of a conic. 3. New researches on the spectrum of oxides, chlorides, and bromides of barium, calcium, and strontium, whose absolute purity has first been proved by chemical analysis. In natural sciences: 1. New researches on the germination of seeds, especially on the assimilation of nutritive deposits by the embryo. 2. New researches on development of Trematoda, from the histogenic and organogenic point of view. 3. New stratigraphical, lithological, and palæontological researches fitted to determine the arrangement or order of succession of layers of the formation named Ardennais by Dumont, and at present considered as Cambrian. The value of the medals awarded will be 600 francs for each question. Memoirs (which may be in French, Flemish, or Latin) are to be sent in, with mottoes as usual, before August 1, 1881. (A prize question on torsion is reserved for the programme of 1882.)

FROM the following extract from the *Planter's Journal*, quoted in the *Barbados Globe* of March 8, it will be seen that science has reached that remote colony:—"Those who are interested in the agricultural prosperity of Barbados will have observed with pleasure the increased attention that has of late been paid here to the application of the methods and improvements of scientific agriculture to the raising and reaping of our staple crop. The planter is more and more fully realising the fact that, if he is to hold his own in the face of the competition that is springing up all around him in the field where his supremacy was once unquestioned, he must persistently and patiently invoke the aid of the processes and the discoveries which science offers to those who seek her. Hence it is that we have now, under the provisions of the Education Act, 1878, an Island Professor of Chemistry and Agricultural Science; that there is besides a private analytical chemist resident amongst us; and that the Barbados Agricultural Society has appointed a Chemical Committee, which has for some months been steadily engaged in doing good, though unostentatious, work in obtaining analyses of manures and similar matters. The result of these movements is seen in the encouraging fact that the prudent planter, in purchasing his foreign fertilisers, is more careful in inquiring into their quality, and, as a necessary consequence, the agents for the better class of manures are willing to meet his requirements by placing before him satisfactory analyses of the articles which they offer for sale. There prevails therefore in the manure market a better condition of things both for the buyer and for the honest vendor—the former receiving more value for his money, and the latter running less risk of being undersold by the fraudulent maker of 'sophisticated' manures."

IN consequence of the general election it has been considered advisable to fix the date for the Conference on the Progress of Public Health—which has been held annually by the Society of Arts since 1876—somewhat later than was originally intended, or than has been the case in former years. It will therefore be held in the beginning of June. A programme of subjects for discussion has been drawn up by the Executive Committee, and will be submitted to the Conference. The following are the subjects included:—1. The development of Local Government administration, especially by the constitution of County Boards. 2. The extension of the powers of the local authorities of urban and rural sanitary districts. Amendments in the Public Health Act. 3. Sanitary inspection and classification of dwellings. 4. Amendments in the Rivers Pollution Prevention Act. 5. The advisability of strengthening the administrative organisation of the Local Government Board. Local Government Board Administration Areas. 6. Further suggestions by sanitary authorities. The programme will also be issued to sanitary authorities throughout the kingdom. It is not proposed to make any attempt to procure papers which may be read and discussed; but the Committee state that they will be glad to receive any communications containing fresh information or giving accounts of progress made since the last Conference. Such communications, if approved by the Committee, will be printed and circulated at the Conference, but it is probable that time will not admit of any discussion being taken upon them.

THE Scientific Committee of the Royal Horticultural Society, having appointed a committee to collect evidence and report the effect of the past severe winters and cold summer on trees, shrubs, and plants, will be glad of the co-operation of all horticulturists interested in the subject, whether members of the Society or not. Forms are in preparation for filling up, and may be had on application to the Secretary, South Kensington.

WE regret to hear that the University of St. Andrew's is in such difficulties that it has been resolved to reduce the salaries of the professors to a considerable extent for some years, unless her

old alumni and other friends come to the rescue. A large part of the income of the University is derived from the farms which form part of its endowment, and the recent depreciation of this kind of property has seriously affected the moderate income of the University, which we hope will be able to weather the storm.

THE University of Buda-Pesth, which was founded in 1635, intends to celebrate, on May 13, the hundredth year since its revival and development by Maria Theresa. There will be a thanksgiving service in the morning and a grand academical and civic procession through the streets. An oration will be delivered and an ode recited, and there will be a banquet, to be followed by a grand ball. In honour of the occasion medals will be struck, honorary degrees will be conferred on distinguished men, and a work by the Hungarian Minister of Justice, Pauler, describing the work of the University during the last 100 years, will be published.

IN consequence of the unavoidable absence of Dr. C. W. Siemens, his paper at the Society of Telegraph Engineers, on "The Application of the Dynamoelectric Current to the Fusion of Defractory Materials in considerable Quantities," which was to have been read on the 14th inst., is postponed until the 28th inst. The papers to be read will be seen from our Diary.

BAUMGARTNER, the inventor of a navigable balloon, having three cars attached, each with ten or twelve wings, set in motion by a crank, has attempted an ascent at Leipzig. On the rope being cut the balloon rose very slowly, skimming the house-tops, whereupon the two assistants jumped out of the centre car in alarm. The balloon shot up to a great height, then burst and fell. Baumgartner was not seriously hurt, and is resolved on a second experiment.

THE ship *Border Chief*, which arrived at Melbourne from London on February 14, reports seeing an iceberg of very large proportions in lat. 47° S. and long. 52° E. This ice island was considered to be about 250 feet high and about five miles in length. Another vessel, it is stated, struck an iceberg on March 26, in lat. 46° N., long. 48° W., and sank next day. A Cardiff steamer on her homeward voyage from New York encountered an immense mass of drift-ice, which it took forty-eight hours to get clear of; in steaming through it she received several injuries. No fewer than 100 icebergs are stated to have been seen on the passage.

THE season is extremely rainy in Algeria, and an almost unexampled occurrence has taken place; inundations have destroyed some houses at Nemours, and the traffic on the railway from Arzew to Saïda has been obstructed by the fall of rocks undermined by the recent rains. A magnificent crop is anticipated, and travelling in the Sahara will be exceptionally easy this summer.

WE have on our table the following works:—"The Field Naturalist's Handbook," Rev. J. G. Wood and Theodore Wood (Cassell); "Water Analysis," E. Frankland (van Voorst); "Botany for Children," Rev. G. Henslow (Stanford); "Ethnology," J. H. Painter (Baillière); "Guide to the Electric Testing of Telegraph Cables," V. Hoskier (Spon); "The Influence of Colloid upon Crystalline Form and Cohesion," Dr. W. M. Ord (Stanford); "Introduction to the Science of Language," 2 vols., A. H. Sayce (Kegan Paul); "Indian Notes," F. K. Hogg, M.D. (Churchill); Publications of the Cincinnati Observatory; "Micrometrical Measurements of Double Stars;" "The Constitution of the Earth," R. Ward (G. Bell and Sons); "The Disestablishment of the Sun," John Bland (Sprague and Co.); "Abbildungen von Vogel-skeleten," Dr. A. B. Meyer (Dresden); "A Criticism of Dr. Croll's Molecular Theory

of Glacier Motion," J. J. Harris Teall (Simpkins); "Secret of a Good Memory," J. Mortimer Granville (Bogue); Journal of the Royal Society of New South Wales, and Annual Report of the Department of Mines of New South Wales (Trübner); "Notes of Observation of Injurious Insects;" "Astronomie Populaire," Camille Flammarion; "Practical Chemistry," W. A. Tilden (Longmans); "The Sidereal Messenger of Galileo Galilei," E. S. Carlos (Rivington); "British Marine Polyzoa," 2 vols., Thomas Hincks (van Voorst); "United States Geological Survey," vol. xii. 1879; "Testing Instructions," vol. ii., Schwendler (Trübner); "Physiology of Religion," part 1, Henry Lee (Trübner); "Transactions of the Cremation Society of England" (Smith, Elder); "International Dictionary for Naturalists and Sportsmen," E. Simpson Baikie (Trübner); "The Geological Record for 1877," edited by W. Whitaker (Taylor and Francis); "Henry's Contribution to the Electro-Magnetic Telegraph," W. B. Taylor (Washington); "Die Beobachtung der Sterne, Sonst und Jetzt," J. Norman Lockyer (Vieweg und Sohn); "Japanese Metric and English Weights and Measures," Edward Kinch (Tokio); "Annuaire de l'Académie Royale des Sciences;" "Elements of Modern Chemistry," Adolphe Wurtz (Swan, Sonnenschein, and Allen); "Geography," Keith-Johnston (Stanford); "Philosophie Scientifique," H. Girard (Trübner); "Australian Orchids," part 5, R. D. Fitzgerald (Trübner).

THE additions to the Zoological Society's Gardens during the past week include a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Mr. G. Kirby; a Prince Albert's Curassow (*Crax alberti*) from Columbia, presented by Mr. H. B. Whitmarsh; a West African Love Bird (*Agapornis pullaria*) from West Africa, presented by Mr. J. W. Gillespie; a Long-eared Owl (*Asio otus*), captured in the Red Sea, presented by Dr. Wm. Anderson; a Greater Black-backed Gull (*Larus marinus*), European, presented by Mr. E. Thornhill; a Slow-worm (*Anguis fragilis*), British, presented by Mr. Leslie Jeyes; two Dingo Dogs (*Canis dingo*), two Red Kangaroos (*Macropus rufus*), two Vulpine Phalangers (*Phalangista vulpina*, var.), two Mauge's Dasyures (*Dasyurus maugei*), a Short-headed Phalanger (*Belideus breviceps*), two Emus (*Dromæus nova-hollandie*) from Australia, two Common Wombats (*Phascolomys wombat*), from Tasmania, a Weeper Capuchin (*Cebus capucinus*) from Brazil, a Horned Tragopan (*Cerionis satyra*) from the South-east Himalayas, deposited; a Feline Dourocouli (*Nyctipithecus vociferans*) from South Brazil, a Rock Cavy (*Cerodon rupestris*), a White-spotted Rail (*Rallus maculatus*), an Orinoco Goose (*Chenalopez jubata*), a Brazilian Teal (*Querquedula brasiliensis*) from Brazil, purchased.

## GEOGRAPHICAL NOTES

As might have been expected, Prof. Nordenskjöld and his companions have met with an enthusiastic reception in Paris, both from Government, from the scientific societies, and from the general public. Delegates from the Government received him on his arrival, the unusual honour of a Commandership of the Legion of Honour has been conferred upon him, while Capt. Palander has been made an officer. He was present at the public meeting of the Sociétés Savantes, when he received a warm reception, while the Geographical Society received him publicly in the Cirque de the Champs Elysées. On Sunday a banquet at the Hôtel Continental was given him, with Prince Oscar of Sweden as president, and on Monday another banquet by the Geographical Society as a body, while the municipality of Paris presented him with a special gold medal. We wonder if any member of the municipality of London could tell who Nordenskjöld is, or what he has done, that all Europe, except England, should make so much fuss about him. Such a reception as he has had in Paris in its nationality and publicity contrasts markedly with the treatment he received here. No doubt he arrived at an unfortunate time, but